

Drought, wellbeing and adaptive capacity in drought-affected New South Wales (NSW)



Emma K Austin¹, Tonelle Handley², Anthony S Kiem¹, Jane L Rich³, David Perkins² and Brian Kelly⁴

<https://doi.org/10.3390/ijerph17197214>

Affiliations: ¹Centre for Water, Climate and Land, University of Newcastle; ²Centre for Rural and Remote Mental Health; ³Centre for Brain and Mental Health Research; ⁴School of Medicine and Public Health, University of Newcastle



Introduction

Individual and community adaptive capacity is essential when responding to the impacts of drought. Exploring the relationship between adaptive capacity and wellbeing may provide insights into methods to enhance adaptive capacity, and therefore increase opportunities for effective drought adaptation. The theory of salutogenesis was used in this study and is conceptualised as representing the phenomena whereby some individuals stay well and cope with stressors and adversity, while others do not. A core component of the theory of salutogenesis is the SOC. SOC has been found to impact quality of life; where stronger SOC results in better quality of life and represents the ability to comprehend the whole situation and the associated capacity to use the resources available to cope with the situation.

Methods

Data were gathered via an online survey using Research Electronic Data Capture (REDCap). The survey included open and closed questions. Wellbeing was measured using the K10, whereby the absence of psychological distress represents positive wellbeing. SOC can be measured by the sense of coherence scale, the 13-item version of the SOC (SOC13) is used. The SOC13 is a seven-point semantic differential scale; designed to measure connotative meaning, where the connotations are then used to derive the attitudes towards the object, event or concept under investigation. Using this measuring tool requires respondents to select their position on a scale between two polarised adjectives (e.g. “good” or “bad”)

Results

Average SOC for each level of distress according to drought condition is shown in Table 1. Participants with low distress had stronger average SOC regardless of drought condition while participants with high distress had weaker average SOC. Average SOC was weak for all drought categories, ranging from 62-57, demonstrating that more than 10% of months in drought in the previous 24 months, resulted in average SOC being weak overall. The highest number of months in drought (>25%) had the weakest average SOC (57).

Table 1: Average SOC according to drought condition and level of psychological distress (K10) (note: weak SOC=13-63; strong SOC=64-91)

Psychological distress	Drought condition (percent of months below decile 1 in the 24 month time window)						Total (mean)
	0-5%	>5-10%	>10-15%	>15-20%	>20-25%	>25%	
Low	-	-	77	75	75	-	76
Moderate	-	-	62	65	60	57	62
High	-	-	52	50	50	-	51
Total (mean)	-	-	62	62	61	57	

Conclusions

SOC has not previously been used to measure adaptive capacity, despite the literature suggesting this relationship. While adaptive capacity was not associated with drought condition, it was found that increased wellbeing is linked to improved adaptive capacity. Findings suggest increased wellbeing is associated with stronger adaptive capacity and therefore, an individuals' capacity to cope with stressors, such as drought and rural adversity, and remain well.

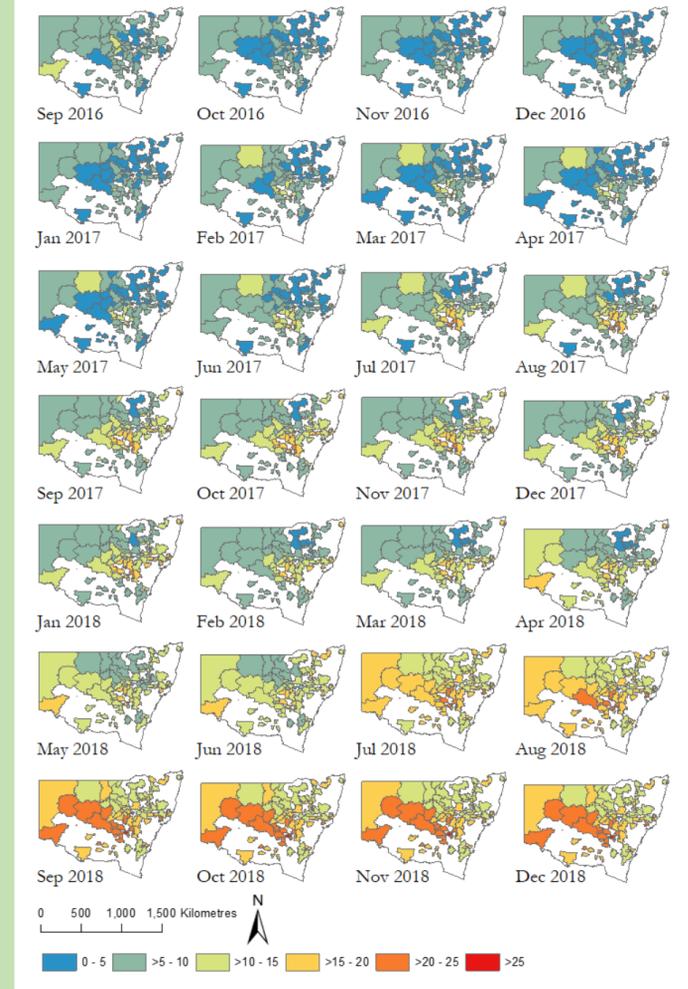


Figure 1: Percentage of months below precipitation decile 1 (24 month time window) for the postcodes where participants resided

During the 24 months prior to the survey there was a gradual yet explicit spread of drought conditions in NSW. All participants had experienced a minimum of 10-15% of months in drought in the past 24 and a maximum of 25% of months in drought. In addition, the drought condition for many participants had been escalating during the time of data collection for this study